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ENVIRONMENTAL STRATEGIES CORPORATION

11911 Freedom Drive • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

June 28, 1999

Mr. David Reynolds
City of Chicago, Department of Environment
Brownfields Division
Room 2500
30 North LaSalle Street
Chicago, IL 60602-2575

Re: Draft Supplemental Remedial Action Work Plan
Dutch Boy Site - Chicago, Illinois

Dear Mr. Reynolds:

Enclosed are three copies of the draft Supplemental Remedial Action Work Plan for the Dutch Boy Site in Chicago, Illinois. This Work Plan is being submitted in accordance with the Consent Decree between the City of Chicago and NL Industries, Inc.

If you have any questions, please do not hesitate to contact us.

Sincerely yours,

A handwritten signature in cursive script that reads "James P. Bulman".

James P. Bulman
Senior Vice President

JPB:css

Q:\word\ircc\nl\dutchboy\letter3.doc

Enclosure

cc: Brad Bradley, U.S. EPA Region V
Terry S. Casey, C.E.P. – Casey and Young, LLC



ENVIRONMENTAL STRATEGIES CORPORATION

11911 Freedom Drive • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

SUPPLEMENTAL REMEDIAL ACTION WORK PLAN

**DUTCH BOY SITE
CHICAGO, ILLINOIS**

DRAFT

PREPARED

BY

ENVIRONMENTAL STRATEGIES CORPORATION

JUNE 28, 1999

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Acronym List

bgs	below ground surface
EOC	Extent of Contamination
Environ	Environ International Corporation
EPA	U.S. Environmental Protection Agency
EP	extraction procedure
ESC	Environmental Strategies Corporation
E&E	Ecology and Environment, Inc.
Harza	Harza Environmental Services, Inc.
IAC	Illinois Administrative Code
IDPH	Illinois Department of Public Health
IEPA	Illinois Environmental Protection Agency
mg/kg	milligrams per kilogram
mg/l	milligrams per liter
NL	NL Industries, Inc.
OSC	On-Scene Coordinator
QAO	Quality Assurance Officer
QAPP	Quality Assurance Project Plan
RCRA	Resource Conservation and Recovery Act
RD/RA	Remedial Design/Remedial Action
SAIC	Science Applications International Corporation
Simon	Simon Hydro-Search, Inc.
SRA	Supplemental Remedial Action
TCLP	Toxicity Characteristic Leaching Procedure
Toxcon	Toxcon Engineering Company, Inc.
UAO	Unilateral Administrative Order
XRF	X-ray fluorescence

1.0 Introduction

1.1 General

Environmental Strategies Corporation (ESC), on behalf of NL Industries, Inc. (NL), has prepared this Supplemental Remedial Action (SRA) Work Plan (Work Plan) for the former Dutch Boy site in Chicago, Cook County, Illinois. The objective of the SRA is to reduce the threat to human health and the environment posed by soil beneath the paved area at the site containing concentrations of lead above the United States Environmental Protection Agency (EPA) established risk-based cleanup goal of 1,400 milligrams per kilogram (mg/kg).

This SRA is being conducted in accordance with the June 9, 1999, Consent Decree between the City of Chicago and NL. The purpose of the SRA is to mitigate and manage risks posed by lead present in shallow soil under paved areas at the Site. The SRA describes the additional work that will be performed to abate the risks associated with lead-containing soil beneath a paved area at the site.

NL is implementing a Remedial Design/Remedial Action (RD/RA) at the site in accordance with the terms of the March 26, 1996, Unilateral Administrative Order (UAO)¹ issued to NL by the EPA. The RD/RA was designed to implement the EPA-approved alternative to abate the risks associated with surface soil containing lead above the risk-based cleanup goal. The approved alternative implemented under the RD/RA was detailed in the Risk Management Plan prepared by Environ International Corporation (Environ), dated December 1998.

1.2 Summary of Work

NL will excavate, treat, and dispose of off-site soil with lead concentrations over 1,400 mg/kg under those paved areas at the site identified as SS19, SS25, SS26, SS27, and SS28, as identified in the Risk Management Plan. Figure 3 identifies the area where the soil will be excavated. Soil will be excavated to at least the same extent and in accordance with the cleanup standards set forth in Section 3.4 of the RD/RA Work Plan (ESC 1999) prepared for the site.

¹ United States Environmental Protection Agency, (USEPA 1996). Administrative Order Pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as Amended, 42 U.S.C. Section 9606(a), and Section 7003 of the Resource Conservation and Recovery Act, as Amended, 42 U.S.C. 6973. March 26, 1996.

Approximately 3,250 square yards of concrete will be removed and disposed of offsite. Approximately 1,150 cubic yards of lead-containing soil will be excavated and treated onsite by stabilization to eliminate the toxicity characteristic (nonhazardous). The treated soil will be disposed of offsite at a landfill permitted under Subtitle D of the Resource Conservation and Recovery Act (RCRA).

The paved areas of the site to be removed appear to be concrete slabs from former site buildings. Portions of the concrete surfaces are cracked and in disrepair.

2.0 Site Description

2.1 Site Location and Description

The former Dutch Boy site is located at 12000 to 12054 South Peoria Street and 901 to 935 West 120th Street, Chicago, Cook County, Illinois (Figures 1 and 2, Appendix A). The site comprises 5.2 acres and is situated in a primarily industrial area. It is bound to the north by West 120th Street, to the east by South Peoria Street, to the south by rail lines of the Illinois Central Gulf Railroad, and to the west by an empty lot.

There are no buildings standing at the site although concrete building slab foundations cover much of the site. Approximately 75-percent of the site is under concrete cover. The concrete slabs are believed to be up to 1-foot thick. The unpaved areas run in strips from north to south along the western edge of the property and extend to the southeast corner of the site.

2.2 Site History

From 1906 to 1980, the site was used to manufacture and refine white lead (i.e., lead carbonate) and lead oxide for lead-based paints and other lead-related products. No manufacturing has been conducted at the site since 1980. Based on previous reviews of Sanborn maps and historical aerial photographs, building demolition occurred at the site from the mid-1980s through 1996.

Various industrial activities have been conducted in the vicinity of the site, including an aluminum foundry, metal machining shops, vehicle and heavy equipment maintenance and storage, junkyards, coal yards, and other metal treatment, forging finishing, and pickling operations. However, most of the properties surrounding the site are currently abandoned or vacant, it is likely that historic activities at these facilities have influenced lead concentrations in soils in the vicinity of the Dutch Boy site.

2.3 Topography

The site surface is generally flat. Most of the site is either at ground surface or elevated approximately four feet to loading-dock level. The ground elevation at the site is approximately 610 feet above mean sea level (United States Geological Survey 7.5' Blue Island, Illinois

Quadrangle, 1993). Area topography generally slopes to the south towards the Little Calumet River located over 1 mile south of the site.

2.4 Summary of Previous Investigations

Environmental investigations began at the site in 1986 with an Illinois Environmental Protection Agency (IEPA) conducted removal action. This removal was done in three phases. IEPA removed and disposed of surficial solids, both suspected and known to contain lead and asbestos during Phase I in June 1986.

IEPA sampled, analyzed and disposed of liquids, solids and sludges contained in all aboveground and underground storage tanks during Phase II in November 1986. IEPA also removed and disposed of all existing process and production equipment, baghouses, mixing tanks, screw conveyors, hoppers, masonry rubble, asbestos, and debris located in and around the building. The freestanding walls of the buildings were demolished during Phase II. IEPA assessed the structural integrity of the underground storage tanks and concluded that they were structurally sound and did not leak during Phase III in 1987. IEPA also sampled and analyzed soil for lead. Results indicated that 130 cubic yards of soil on and adjacent to the site contained Extraction Procedure (EP) toxicity extract lead concentrations greater than 5 milligrams per liter (mg/l) and approximately 140 cubic yards of soil contained greater than 1 percent lead. An EP toxicity extract lead concentration equal to or greater than 5 mg/l was defined as a hazardous waste under the RCRA regulations in effect at that time. The soil was not removed.

In June 1987, Toxcon Engineering Company, Inc. (Toxcon) conducted a field investigation at the site on behalf of NL. Samples were collected at 34 locations onsite and in the parkway across the street from the site. A soil sample taken from the northeast portion of the site contained a total lead concentration of 11,400 mg/kg. A second sample taken from the west side of the site contained 50,000 mg/kg of total lead. This second sample also had an EP toxicity extract lead concentration of 41 mg/l. In addition, analysis of a third sample taken from the parkway northeast of the site had an EP toxicity lead extract concentration of 4.6 mg/l. Based on these sample results and discussions with IEPA, Toxcon conducted additional field sampling in February 1988 and concluded that one onsite area and two offsite areas contained EP toxicity extract lead concentrations greater than 5 mg/l.

In 1991, EPA's contractor, Ecology and Environment, Inc. (E & E) conducted a reconnaissance at the former Dutch Boy site. E & E observed small piles of general household and construction refuse scattered over the site. Since abandoned building structures containing potentially hazardous substances and lead-containing soils surrounding these structures were still present, E & E concluded that release of hazardous substances to the air posed a potential threat to human health. E & E recommended that the site be secured to prevent access by the public and that samples of the building structures and soils be taken to determine whether the release of hazardous substances from the site posed a potential threat to the community.

On August 10, 1993, EPA, IEPA and E & E conducted a site assessment of the former Dutch Boy property. No soil piles or exposed soils were identified at the site and no soil samples were collected. On August 25 and 26, 1993, Simon Hydro-Search, Inc. (Simon) conducted an environmental assessment of the site on behalf of NL. Eleven soil samples were collected from seven onsite locations. In samples from the area of the loading dock and railroad spur on the west side of the site, total lead concentrations as high as 45,700 mg/kg and Toxicity Characteristic Leaching Procedure (TCLP) lead extract concentrations as high as 694 mg/l were measured. A TCLP extract lead concentration equal to or greater than 5 mg/l is defined as a RCRA hazardous waste (hazardous waste code D008).

On May 10, 1994, Harza Environmental Services, Inc. (Harza) conducted a site investigation on behalf of the City of Chicago. Harza collected and analyzed 13 wipe samples and 13 scrape samples from the former 3-story mill building at the site. Seven of the 13 wipe samples and 8 of the 13 scrape samples met the Illinois Department of Public Health (IDPH) definition of a lead-bearing substance. Six soil samples collected from depths between 6 and 15 feet below ground surface (bgs) were analyzed for TCLP lead. One other soil sample was collected at a depth of 1.0 to 2.5 feet bgs. All soil samples had TCLP lead concentrations at or below the 5.0 mg/l RCRA concentration for hazardous waste.

On June 8, 1995, an EPA on-scene coordinator (OSC) and staff from E & E and Harza conducted another site assessment. Six soil samples were collected and analyzed for lead. Total lead was detected in onsite soils at concentrations ranging from 1,540 mg/kg to 31,700 mg/kg. A total lead concentration of 21,200 mg/kg was reported in a sample collected from the east side of the building structure near a fire hydrant. A total lead concentration of 31,700 mg/kg was

reported in another sample collected from the east side of the northernmost loading dock on the west side of the site. This sample also had a TCLP lead extract concentration of 351mg/l. In an August 25, 1995, Site Assessment Report, E & E concluded that the site should be secured and an extent of contamination study should be conducted to determine the extent of lead-containing soil at the site.

In February 1996, EPA's contractor, Science Applications International Corporation (SAIC), reviewed the available reports on the site and assessed the likelihood of a potential release of lead from the historic manufacturing processes. SAIC calculated that approximately 166 tons of lead were released into the air between 1906 and 1980 from the historic manufacturing activities. Assuming that each of the manufacturing processes site had a short stack, low exit velocity, and low temperature, SAIC predicted that most of the emissions would have settled out within several hundred feet.

In March 1996, EPA prepared an interim final risk assessment for the site. The risk assessment assumed that the site would be used for an occupational scenario and that it would not be frequented by small children. Based on these assumptions, EPA calculated a risk-based clean-up goal of 1,400 mg/kg as the average concentration of lead in soil, which would allow for risks within an acceptable range. In addition, the risk assessment recommended that any hot spots which are significantly higher than the 1,400 mg/kg be remediated even if, when averaged, they contribute to an acceptable range of risk.

In 1997 an Extent of Contamination (EOC) survey was conducted for the site by Environ Corporation. The primary objective of the EOC survey was to evaluate the vertical and horizontal extent of lead in soil at the site and in its vicinity. Over 350 samples from 151 locations were collected and analyzed. The extent of onsite soil containing lead at concentrations greater than the 1,400 mg/kg average risk-based cleanup criteria was found to be generally limited to the western, unpaved portions of the site. The areas most affected are the former rail spurs leading to the loading dock in the northwestern portion of the site. Surface soil (i.e., 0.0 to 0.2 feet bgs) lead concentrations in the rail spur area range from 5,000 to 10,000 mg/kg.

Selected soil samples also were analyzed for several other parameters (e.g., asbestos, petroleum hydrocarbons, and volatile organic compounds) to evaluate their impact on remedial

technologies for the lead-containing soil. Diesel-related petroleum hydrocarbons were identified in soil samples collected near the loading dock in the northwest portion of the site. The petroleum-hydrocarbon impacted soil is confined to the immediate vicinity of the underground storage tanks. Based on the concentrations of hydrocarbons detected at the site, it is unlikely that they will affect the technology selected to address lead-containing soil.

3.0 Description of Supplemental Remedial Action

The Supplemental Remedial Action for the Dutch Boy site consists of the following components:

- Removing concrete slabs and disposing offsite
- Excavating soil containing lead greater than 1,400 mg/kg
- Stabilizing soils onsite to render them nonhazardous
- Disposing of soil offsite
- Backfilling and compaction of excavated areas

Appendix B of the RD/RA Work Plan (ESC 1999) contains the Technical Specifications detailing the requirements for implementation of the Remedial Action; those specifications will be followed in the implementation of this SRA and are incorporated by reference. In the RD/RA Work Plan Technical Specifications, the Division 1 specifications detail the general requirements for the management and execution of the Supplemental Remedial Action. The Division 2 specifications detail the specific tasks required to execute the Remedial Action as follows:

- Section 02205 - detailed requirements for soil materials that shall be used as unclassified fill for the backfill and suitable material for topsoil.
- Section 02211 - detailed grading requirements to bring grades to proper elevations using on site material.
- Section 02222 - detailed requirements for excavation of soil from the paved areas of the site.
- Section 02223 - detailed requirements for backfilling and compacting the excavation areas.
- Section 02445 - detailed requirements for stabilizing the excavated lead-containing soil that exhibits the characteristic of toxicity at the site.

Figure 3 in Appendix A contains the plans for concrete removal and soil excavation.

3.1 Site Preparation

Site preparation consisted of implementing erosion and sedimentation control measures. These measures were instituted as part of the RD/RA conducted at the site and were conducted in general accordance with specifications presented in the U.S. Department of Agriculture, Natural Resource Conservation Service's guidance titled "Illinois Urban Manual: A Technical Manual

Designed for Urban Ecosystem Protection and Enhancement.” Silt fence was placed along various portions of the site perimeter not covered with concrete surfaces. Straw bale fences were placed along various portions of the site perimeter with concrete surfaces. These control measures are designed to intercept and detain sediment from disturbed areas.

3.2 Soil Remediation

Remediation will consist of removing the concrete, excavating soil containing lead above 1,400 mg/kg, stabilizing the soil onsite, and disposing of the soil offsite. Figure 3 identifies the paved areas where soil contains lead concentrations greater than the EPA’s risk-based cleanup criteria of 1,400 mg/kg. Approximately 3,250 square yards of concrete will be removed and disposed of offsite. Based on the existing condition of the concrete slab, it is anticipated that the concrete is steel reinforced. During removal of the concrete, steps will be taken to remove soil on the underside of the slab using onsite equipment. The concrete will be broken into pieces to allow transportation offsite in rolloff boxes for disposal.

Approximately 1,150 cubic yards of lead-containing soil will be excavated. The excavated soils will be placed in 100-cubic yard stockpiles within the treatment area. Each pile will be sampled and tested for the lead toxicity characteristic. If the sample contains less than 5.0 mg/l lead as measured in the TCLP extract, the soil will be transported to a Subtitle D landfill for proper disposal. If the sample contains more than 5.0 mg/l lead as measured in the TCLP extract, the soil will be treated onsite by stabilization with a reagent to render it nonhazardous. Treated soil will be sampled to verify successful treatment and disposed of offsite at a Subtitle D landfill.

3.2.1 Excavation Plan

As presented in the Risk Management Plan, lead was detected above the 1,400 mg/kg threshold in soil from borings SS19, SS25, SS26, SS27, and SS28 drilled in the paved areas of the site. Following removal of the soil shown on Figure 3, a sampling program will be conducted to verify that the lead concentration remaining in the unexcavated soils, to a maximum depth of 4 feet below ground surface, is less than 1,400 mg/kg.

An X-ray fluorescence (XRF) lead detector will be used to screen soil samples on site to aid in determining whether the cleanup criterion has been attained. Once XRF analysis indicates that the cleanup criterion has been attained, confirmatory soil samples will be collected for laboratory analysis. Soil samples to confirm attainment of the cleanup criterion will be collected from the base of the excavations at a frequency of 1 per 1,000 square feet (approximately 29 samples). No sidewall samples will be collected. The samples will be analyzed for total lead by EPA Method 6010B on an expedited one-week turnaround time basis. Once laboratory analysis has confirmed the attainment of cleanup criterion or the excavation depth has reached four feet, the excavations will be backfilled. If the cleanup criterion is not met, additional excavation in specific "hot-spot" areas will be conducted to attain the risk-based criteria of 1,400 mg/kg lead. Laboratory analysis of samples collected from areas requiring additional excavation will be analyzed on an expedited 24-hour turnaround time basis to facilitate backfilling activities. All sample collection, handling, and management will be in accordance with the QAPP prepared as part of the RD/RA Work Plan (ESC 1999).

3.2.2 Soil Stabilization and Disposal

The objective of the soil stabilization is to eliminate the presence of leachable lead in soil to concentrations below the regulatory TCLP concentration of 5.0 mg/l. Lead-containing soil will be stabilized such that the TCLP lead extract will not exceed 5.0 mg/l. Treatment to this concentration will allow the stabilized soil to be disposed of as nonhazardous waste at a Subtitle D landfill.

A pug mill stabilization system will be used which provides a safe, reliable method to treat lead-containing soil so that the treated material meets the performance criteria. The stabilization system will include control apparatus necessary to meet local, state, and federal regulations for air emissions and fugitive dust. The stabilization system will also meet applicable state and local noise pollution control regulations.

Stockpiles will be made for storing lead-containing soil prior to and following treatment. The stockpiles will be constructed in 100 cubic yard units and will be located on the concrete building slab in the central portion of the site. The stockpiles will be placed under an impermeable geomembrane cover with a minimum thickness of 10 mils. The stockpiles will be covered to eliminate concerns for precipitation entering the stockpiles. The untreated stockpiles will be

sampled for TCLP lead at a frequency of 1 per 100 cubic yards. Those stockpiles that are found to be nonhazardous without treatment will be disposed of at a Subtitle D landfill, without stabilization.

Treated material will be separated into stockpiles for post-treatment testing. Tests for TCLP lead will be performed at a frequency of 1 per 500 cubic yards of material. Stockpile sizes will be equal to or less than the quantity pertaining to the most frequent quality control test. Samples for post-treatment testing will generally be collected immediately after treatment. This will eliminate the need to remove samples from the treated mass after it has cured. Reprocessing and retesting shall be performed on treated material that is determined to be characteristically hazardous for lead toxicity as determined by TCLP testing. Treated material determined to be nonhazardous by TCLP testing will be transported offsite for disposal.

3.2.3 Site Restoration

Excavations will be backfilled to approximate pre-excavation elevations and graded to drain using offsite backfill. Off-site backfill will be non-saturated, well-graded soil provided by a local source, and will be certified free of hazardous substances and deleterious material, such as large roots, rocks, or vegetative matter. At locations where lead contamination exceeding 1,400 mg/kg extends below four feet, a barrier such as snow fencing will be placed at the bottom of the excavation prior to placement of backfill. The backfill will be placed into the excavations in maximum 8-inch lifts and compacted at each lift. A vegetative cover will be established upon completion of backfilling.

4.0 Health and Safety

All work specified in this SRA Work Plan will be conducted in accordance with the Project Health and Safety Plan prepared as part of the RD/RA Work Plan (ESC 1999). This plan will apply to ESC site personnel only. All Contractor personnel shall be required to adhere to a separate Health and Safety Plan that is substantially consistent with ESC's plan and is commensurate with the work and activities that will be completed by the Contractor. The Contractor's Health and Safety Plan will be submitted to ESC for approval prior to initiating the Remedial Action field work.

During execution of the Remedial Action, trucks transporting stabilized material offsite for disposal will be routed to avoid residential neighborhoods. Specifically, trucks will be directed north on South Peoria Street to West 119th Street. Trucks will proceed west on West 119th Street to Interstate Highway 57.

5.0 Permits and Approvals

ESC reviewed all potentially applicable State and local codes and regulations as part of the original RD/RA to determine the permitting requirements for implementation of the Remedial Action. Work associated with the SRA will be performed under the permits and approvals obtained as part of the RD/RA. These permits include an installation permit required by the City of Chicago, Department of Environment, and a water permit required by the City of Chicago, Water Department. No other specific construction permitting or erosion and sediment control permitting requirements are known to apply to the proposed SRA. While erosion and sediment control permits are not required for the project, erosion and sediment control guidelines from the U.S. Department of Agriculture, Natural Resources Conservation Service (USDA 1995) for the state of Illinois will be implemented during the SRA.

6.0 Project Organization

The organizational structure for implementing the Remedial Action is shown on Figure 4. ESC is the principal consultant to NL and is responsible for the performance of all services required to implement the Remedial Action. James Bulman, Senior Vice President of ESC, is ESC's Project Director. He has the authority to commit the firm's resources to accomplish the project objectives. He has ultimate responsibility for ESC and the Contractor's performance and with the Project Manager from the ESC management team for the project.

ESC's Project Manager, Gilbert Gabanski, is responsible for the day-to-day direction and management of all ESC's activities as well as of ESC's contractors. Mr. Gabanski has the responsibility and authority to procure the necessary support services and equipment for implementing the Remedial Action. He has prime responsibility for scheduling, technical matters, and reporting all of ESC's activities and will report directly to the Project Director.

ESC's Engineer of Record, John Black, P.E., is responsible for the engineering design and specifications for the Remedial Action. He is an Illinois-registered Professional Engineer. He will ensure that Remedial Action work is performed in strict compliance with the approved designs and specifications. He has the authority to halt or reject work that does not meet the requirements of the engineering design and specifications.

ESC's Quality Assurance Officer (QAO), John Johnson, is responsible for all aspects of implementing the Quality Assurance Project Plan (QAPP) related to this Remedial Action. He will coordinate with the ESC Project Manager and QAO's of all contractors. He will report directly to ESC's Project Manager or Project Director when corrective action is required as a result of compliance performance audits.

ESC's Health and Safety Officer, Craig Ramich, is responsible for preparing and ensuring that the Health and Safety Plan is followed. He will ensure that all Remedial Action activities are performed in a safe manner to eliminate danger to personnel performing the field activities. He will coordinate with the ESC Project Manager and contractors regarding all procedures related to health and safety. He will report directly to ESC's Project Manager and file injury reports, as required.

7.0 Project Schedule and Reporting

Appendix E presents a project schedule for implementing the proposed SRA. This schedule is subject to change if the extent of lead-containing soil requiring excavation and treatment under this SRA increases.

Within 60 calendar days after completion of the Supplemental Remedial Action, ESC will submit a summary report to the City of Chicago detailing the activities performed during the SRA. The report will include a listing of the quantities and types of materials removed, a discussion of removal and disposal options considered for those materials, a listing of the ultimate destinations of those materials, a presentation of the analytical results of all sampling and analyses performed, a detailed cost summary, and accompanying appendices containing all relevant documentation generated during the SRA (e.g., manifests, invoices, bills, contracts, and permits.) The report will also include a certification of its truth, accuracy, and completeness.

8.0 References

Environ Corporation. (Environ, 1997). Draft Extent of Contamination Survey, Dutch Boy Site, Chicago, Illinois. November 19, 1997.

Environ International Corporation. (Environ, 1998a). Risk Management Plan, Dutch Boy Site. December 1998.

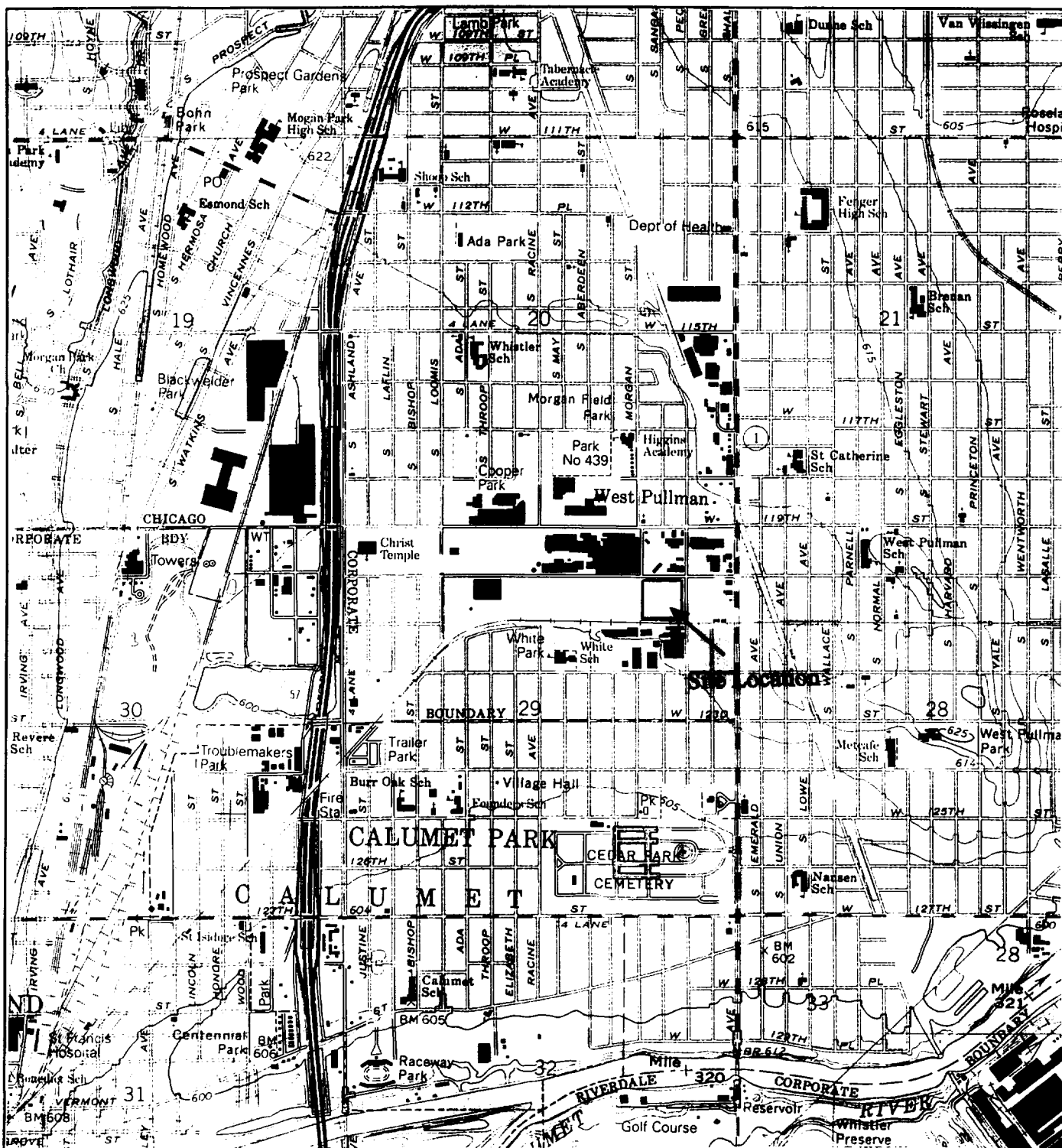
Environmental Strategies Corporation (ESC, 1999). Remedial Design/Remedial Action Work Plan, Dutch Boy Site. March 9, 1999.

United State Department of Agriculture, Natural Resource Conservation Service (USDA 1996). Illinois Urban Manual, A Technical Manual Designed for Urban Ecosystem Protection and Enhancement. 1995.

United States Environmental Protection Agency, (USEPA 1986). Superfund Remedial Design and Remedial Action Guidance, OSWER Directive 9355-0-4A. June 1986.

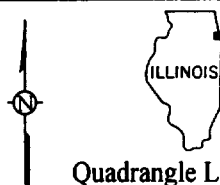
United States Environmental Protection Agency, (USEPA 1996). Administrative Order Pursuant to Section 106(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as Amended, 42 U.S.C. Section 9606(a), and Section 7003 of the Resource Conservation and Recovery Act, as Amended, 42 U.S.C. 6973. March 26, 1996.

Appendix A - Figures

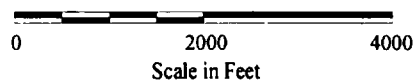


Reference

Blue Island Topographic Quadrangle
 Illinois - Cook Co., US
 Photorevised 1993 Scale 1:24,000

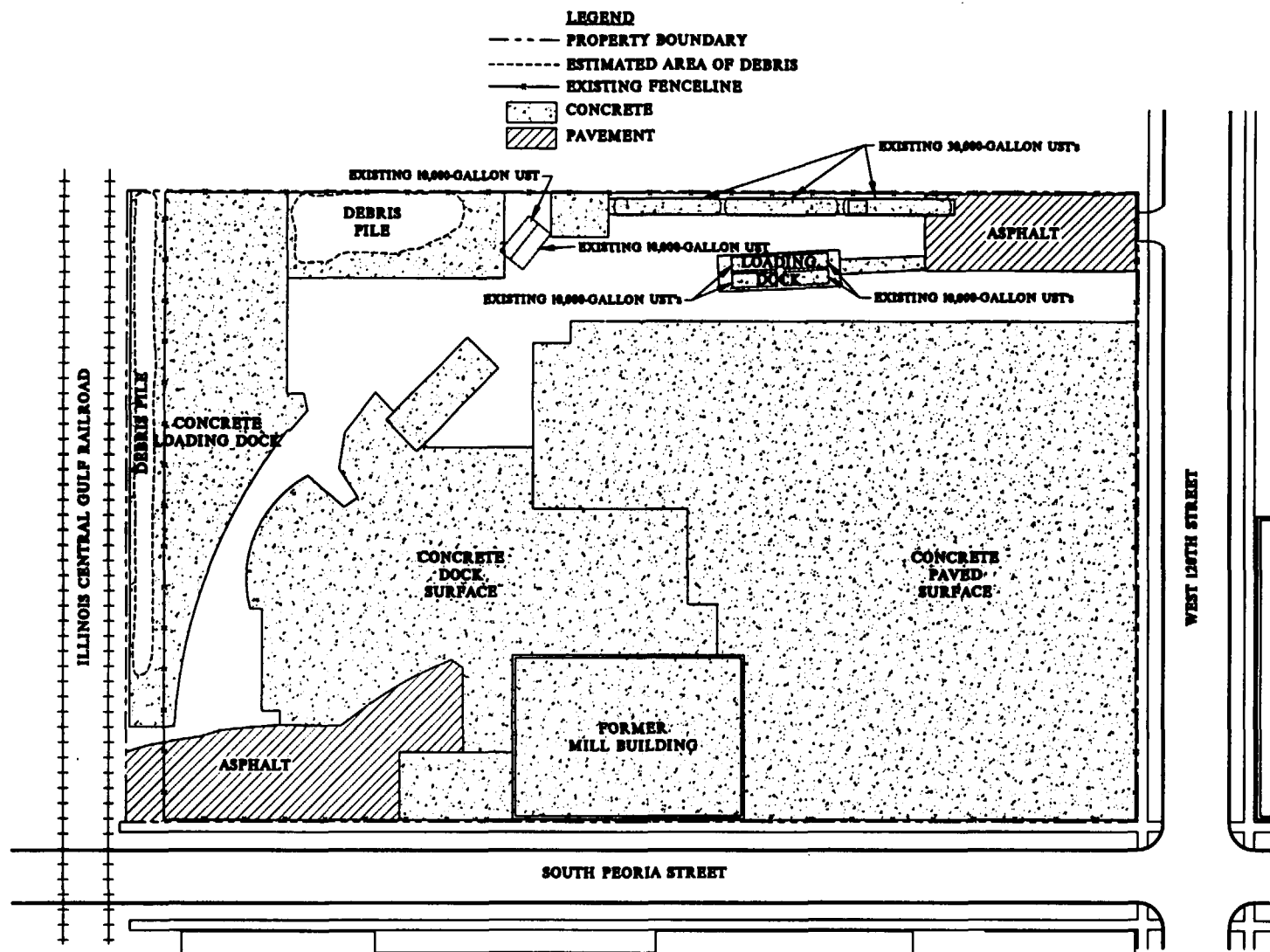


Quadrangle Location



ENVIRONMENTAL STRATEGIES CORPORATION
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 Reston, Virginia 20190
 703-709-6500

Figure 1
Site Location
Dutch Boy Site
Chicago, Illinois



REFERENCE: "PLOT PLAN, FORMER PLANT SITE, CHICAGO ILLINOIS,"
PREPARED BY SIMON HYDRO-SEARCH, DATED 11/01/93.

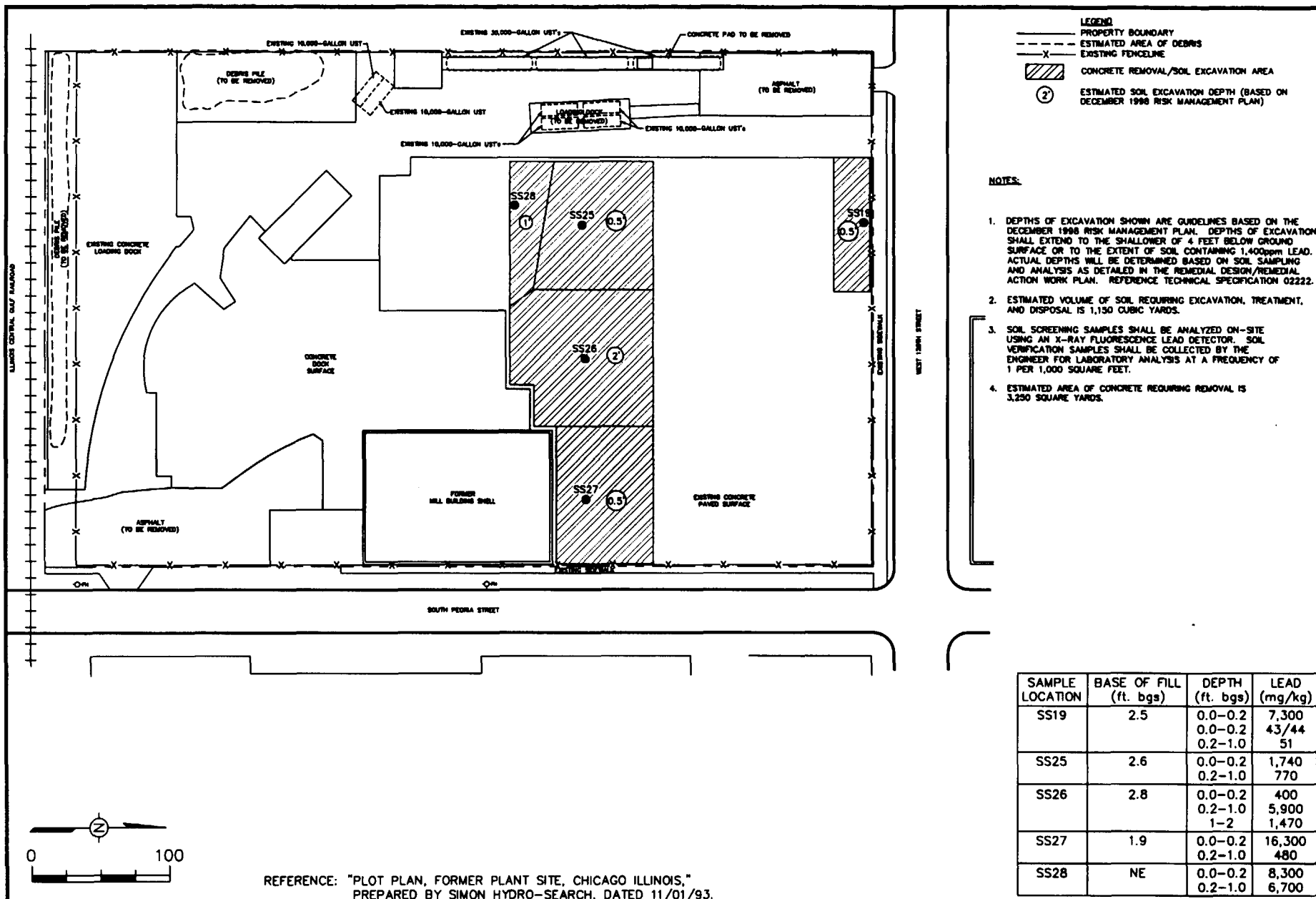


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Figure 2
Site Layout
Dutch Boy Site
Chicago, Illinois

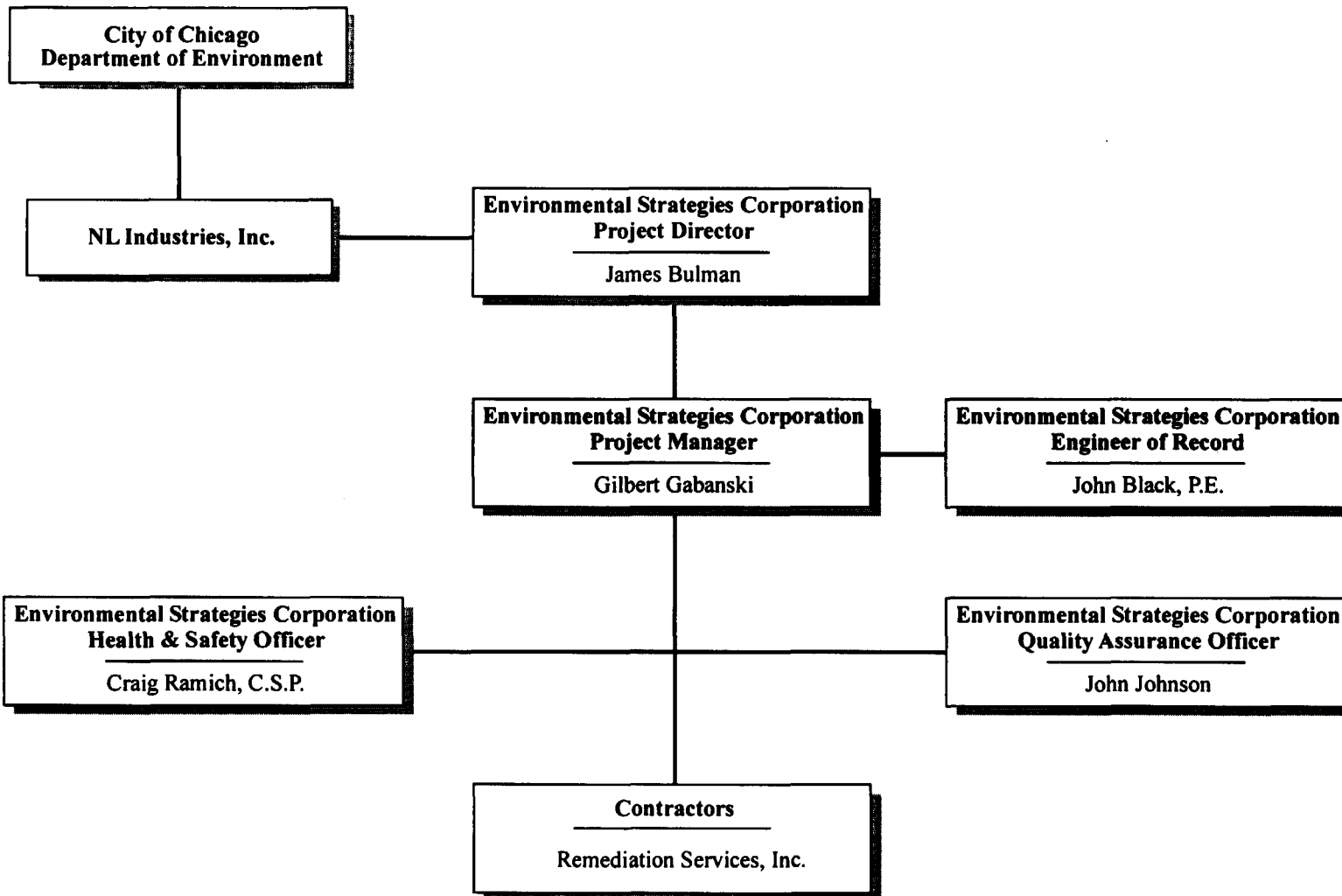
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Figure 3
Supplemental Remedial Action Excavation Plan
Dutch Boy Site
Chicago, Illinois

A83DWG



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Figure 4

Project Organizational Chart

Dutch Boy Site - Supplemental Remedial Action
Chicago, Illinois

Appendix B - Cost Estimate

Table 1

**Cost Estimate
Supplemental Remedial Action
Dutch Boy Site
Chicago, Illinois**

	Units		\$/Unit	>1,400 mg/kg
4A Paved Area Concrete Removal(a)	3,250	SY	\$11.19	\$36,367.50
4B Concrete Transportation & Disposal	1,083	CY	\$50.00	\$54,166.67
5A Excavate Waste Materials > 1,400 mg/kg	1,150	CY	\$6.50	\$7,475.00
5B Onsite Treatment Soils >1,400 mg/kg	1,725	Tons	\$31.50	\$54,337.50
5C Stabilizing Reagent (Est. 5% by Wt.)	87	Tons	\$425.00	\$36,975.00
5D Transportation & Disposal (Subtitle D)	1,812	Tons	\$30.00	\$54,360.00
8 Place, Compact Unclassified Fill	1,150	CY	\$16.00	\$18,400.00
9 Place Top Soil 3"	271	CY	\$25.00	\$6,770.83
10 Seed & Mulch	0.7	Acre	\$3,250	\$2,182.33
Subtotal Soil T&D				\$271,034.83
7.5% of Contractor Cost				\$20,327.61
11 Contractor Management	1	LS	Various	\$15,000.00
12 Document Preparation	1	LS	Various	\$56,000.00
13 Project Management and Oversight	Subtotal Estimate			\$362,362.45
10% Subtotal Estimate				\$36,236.24
TOTAL Estimate				\$398,598.69

LS = lump sum

CY = cubic yard

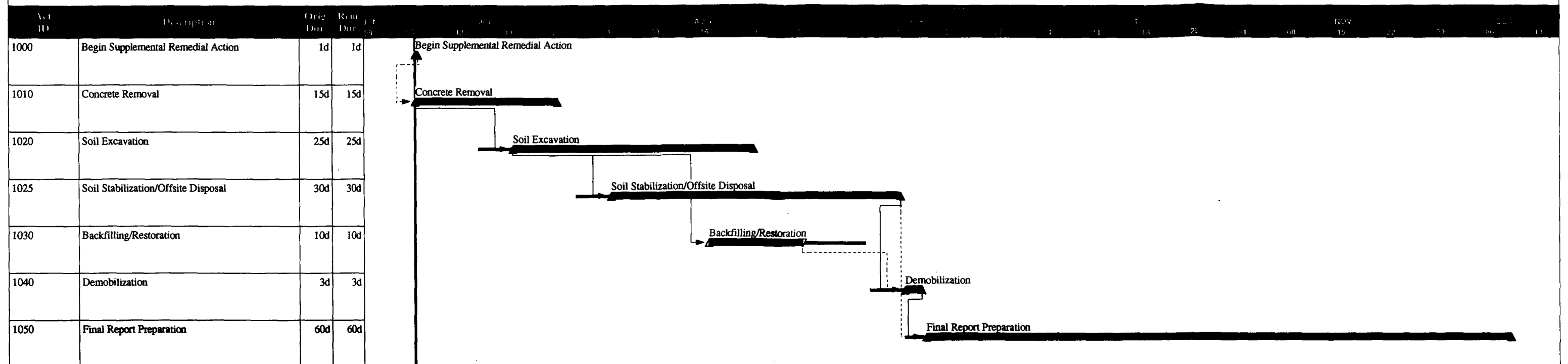
SY = square yards

Gal = gallons

mg/kg = milligram per kilogram

Appendix C - Schedule

Project Schedule
Dutch Boy Site
Supplemental Remedial Action
Chicago, Illinois



- Early bar
- ▲ Early start point
- ▼ Early finish point
- Total float bar
- Progress bar
- Critical bar
- Summary bar
- ▲ Progress point
- ▲ Critical point
- ▼ Summary point
- ◆ Start milestone point
- ◆ Finish milestone point



ENVIRONMENTAL STRATEGIES CORPORATION

11911 Freedom Drive • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

March 9, 1999

Mr. Brad Bradley
United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Re: Draft Remedial Design/Remedial Action Work Plan
Dutch Boy Site - Chicago, Illinois

Dear Mr. Bradley:

Enclosed are two copies of the Remedial Design/Remedial Action Work Plan for the Dutch Boy Site in Chicago, Illinois.

If you have any questions, please do not hesitate to contact us.

Sincerely yours,

A handwritten signature in black ink, reading "James P. Bulman". The signature is written in a cursive, flowing style with a large, prominent "J" and "B".

James P. Bulman
Senior Vice President

JPB:css

Q:\word\ircc\nl\dutchboy\letter4.doc

Enclosure

cc: Terry S. Casey, C.E.P. – Casey and Young, LLC



ENVIRONMENTAL STRATEGIES CORPORATION

11911 Freedom Drive • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

May 6, 1999

Mr. Brad Bradley
United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Chicago, IL 60604-3590

Re: Remedial Design/Remedial Action Work Plan Amended Pages
Dutch Boy Site - Chicago, Illinois

Dear Mr. Bradley:

Enclosed are two sets of amended pages and drawings for the Remedial Design/Remedial Action Work Plan for the Dutch Boy Site in Chicago, Illinois. The amended pages reflect modifications listed in your April 23, 1999, letter to Mr. Terry Casey of Casey and Young, LLC. Regarding your modification number four concerning the Health and Safety Plan, the trucks will be covered before leaving the site.

If you have any questions, please do not hesitate to contact us.

Sincerely yours,

James P. Bulman
Senior Vice President

JPB:css

Q:\word\ircc\in\dutchboy\letter7.doc

Enclosures

cc: Terry S. Casey, C.E.P. – Casey and Young, LLC



ENVIRONMENTAL STRATEGIES CORPORATION

11911 Freedom Drive • Reston, Virginia 20190 • (703) 709-6500 • Fax (703) 709-8505

December 11, 1998

Mr. Brad Bradley
United States Environmental Protection Agency
Region IV
77 West Jackson Boulevard
Chicago, IL 50804-3590

Re: Draft Remedial Design/Remedial Action Work Plan
Dutch Boy Site - Chicago, Illinois

Dear Mr. Bradley:

Enclosed are three copies of the draft Remedial Design/Remedial Action Work Plan for the Dutch Boy Site in Chicago, Illinois.

If you have any questions, please do not hesitate to contact us.

Sincerely yours,

James P. Bulman
Senior Vice President

JPB:hmp

Q:\word\ircc\nl\dutchboy\letter.doc

Enclosure

cc: Terry S. Casey, C.E.P. – Casey and Young, LLC



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

VIA TELEFAX AND
REGULAR MAIL

April 23, 1999

REPLY TO THE ATTENTION OF

Terry Casey
Casey and Young, LLC
14015 Park Drive, Suite 109
Tomball, TX 77375

Dear Mr. Casey:

The U.S. Environmental Protection Agency (EPA) has reviewed the "Remedial Design/Remedial Action (RD/RA) Work Plan" (i.e. 100% Design) for the Dutch Boy Site in Chicago, Illinois (the Site) and hereby approves the document with the modifications listed below and those in the enclosures to this letter. The modifications are as follows:

1. Pages 2, 9, 18, etc.- Regarding placement of the asphalt cap, the text is changed to reflect that this issue is currently under discussion between NL Industries and the City of Chicago, and that either patching, resurfacing, or hot spot removal to 1400 ppm lead will be performed in these areas of the Site. This comment is carried through to all other relevant portions of the RD/RA Work Plan.
2. Page 15, Second Paragraph, sixth sentence- "or the excavation depth has reached four feet" is inserted between "criteria" and "the" in this sentence.
3. Page 17, Section 3.4.3- a sentence is inserted after the second sentence in this section as follows: "At locations where lead contamination exceeding 1400 ppm extends below four feet, a barrier such as snow fencing will be placed at the bottom of the excavation prior to placement of backfill." This comment is carried through to all other relevant portions of the RD/RA Work Plan.
4. Drawings, Sheet 4, Legend- "ESTIMATED" is inserted before "SOIL EXCAVATION DEPTH....." on this drawing.

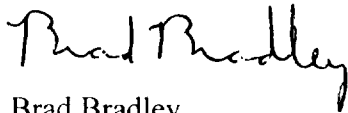
The modification listed in the enclosures is circled. Additional comments in the enclosures are either minor and should be considered but are not required for approval or pertain to portions of the work that are not specifically addressed by the EPA Unilateral Order for the Site. To the extent that NL performs such additional work, these comments should be addressed in the performance thereof. Other minor comments are as follows:

1. Page 12, Paragraph 1- will the air be monitored for contaminants during purging of the USTs?

2. Page 15, Section 3.4.2, second sentence- "0.75" should be replaced with "5.0".
3. Page 16, Third Paragraph- What steps will be taken if it is found out that there is a significant discrepancy in the lead levels of the two representative samples? Will more samples be taken?
4. Health and Safety Plan- Will the trucks be covered before leaving the site?

The RD/RA Work Plan can stand as is with the modifications listed above and in the enclosures, or you can submit amended pages or an amended document to EPA; however, the project schedule will not be extended if you choose to resubmit some or all of the document. You are hereby authorized to begin construction of the on-site remedy outlined in the RD/RA Work Plan. It is my understanding that on-site construction will commence during the week of May 10, 1999; please contact me at your earliest convenience to let me know when intrusive activities will commence. If you have any questions concerning this letter or the enclosures, please contact me at (312) 886-4742.

Sincerely,



Brad Bradley
On-Scene Coordinator

Enclosures

cc: Renante Marante, City of Chicago
Kirk Riley, TOSC
Tony Davenport, MP/VH Advisory Council
Sue Doubet, Illinois EPA



City of Chicago
Richard M. Daley, Mayor
Department of Environment

Twenty-fifth Floor
30 North LaSalle Street
Chicago, Illinois 60602-2575
(312) 744-7606 (Voice)
(312) 744-6451 (FAX)
(312) 744-3586 (TTY)
<http://www.ci.chi.il.us>

Enclosure 1

March 31, 1999

VIA Facsimile and US Mail

Mr. Brad Bradley
U.S. EPA, Region V
77 West Jackson Boulevard, SR - J6
Chicago, IL 60604

**RE: National Lead Industry 100% Remedial Design/Remedial Action
Work Plan - City of Chicago Comments**

Dear Mr. Bradley:

The Chicago Department of Environment (DOE) has completed its review of National Lead Industry Inc.'s (NL's) Remedial Action Work Plan (Work Plan) for the Dutch Boy site (1200 to 12504 South Peoria Street). While some of DOE's comments and concerns from the 60% Work Plan Design were addressed, several concerns still remain. The following are DOE's comments and concerns:

Asphalt Cap Cover - As USEPA is aware, the City and NL have initiated negotiations on this topic. One option being considered would be to leave the contaminated soils under the slab. DOE would like to ensure that the proposed engineered cap will be protective of human health and environment and that the cap will not be a further nuisance to the site.

DOE feels that, as it is, the current capping plan is not protective of human health and the environment. It appears in Sheet #4 that NL will cap only the south half of the paved area. DOE strongly urges that NL be required to cap the north half of the paved area for the following reasons:

1) Pavement Condition - The pavement in this area is in the same state of disrepair as the south portion. Also, several areas along the fence have large areas of exposed soils; and

2) Limited Sampling Data - Given the limited number of samples, it is not possible to determine conclusively that soils under this paved area do not exceed 1400 mg/kg. Furthermore, Environ's Extent of Contamination Survey showed one sample taken from the north portion to be as high as 7,300 mg/kg for lead.

In addition, the engineered cap should be designed to allow for the proper management of stormwater on the paved area. Specifically, NL should implement measures to control stormwater runoff/runoff and prevent stormwater accumulation on the paved area.



Soil Remediation Excavation Plan - NL has modified its Work Plan to remove all soils with lead concentrations above 1,400 mg/kg as opposed to the averaging approach NL presented in the 60% Work Plan. However, under the new scenario, NL will excavate only to a maximum depth of four feet, leaving some soils with lead concentrations above the 1,400 mg/kg threshold still in place. Furthermore, under this approach, NL will actually remove less soil than was proposed in the 60% Workplan.

DOE would still prefer the removal of all soils above the 1,400 mg/kg lead level. However, it is DOE's understanding that USEPA believes that the four feet of soil cover will be sufficient to eliminate the ingestion pathway for lead. In the event USEPA concurs with NL's latest approach, then the following conditions should be imposed:

- 1) NL shall ensure that no hazardous waste will remain in place;
- 2) NL shall ensure that soils impacted by other contaminants of concern (i.e. the DRO's, GRO's, ethylbenzene, etc.) are cleaned-up to TACO's industrial/commercial standards; and
- 3) In accordance with TACO, NL shall analyze the migration to groundwater potential of the remaining soils. This should include running TCLP and/or SPLP on the confirmation samples, the use of models as necessary to predict future impacts to the groundwater, and the installation of monitoring wells to determine the existing concentrations of contaminants in the groundwater.

Underground Storage Tanks (USTs) - NL has indicated in its negotiations with the City that it is willing to remove the USTs. Therefore, the statement "if required by applicable regulations" should be deleted in the Work Plan, page 9 under the bullet item Section 02071 and in the Technical Specifications, page 1 of Section 01010, the first bullet item.

In addition, DOE requests that NL explicitly state in the Work Plan and Technical Specifications that in the event of a release, NL will follow through the incident all the way to regulatory closure under the Leaking Under Ground Storage Tank program (LUST).

Debris Pile Removal and Disposal - As RACM is present on the property, the site is currently an OSHA Class II asbestos site. As such, applicable asbestos regulations (e.g. OSHA, NESHAP, etc.) should be included in Section 01060 - Regulatory Requirements of the Technical Specifications and other sections pertaining to regulatory requirements. DOE reserves the right to review and approve the asbestos abatement plan prior to its implementation at the site. Given the project start date, NL should begin the task of preparing the asbestos abatement plan as soon as possible.

Mr. Brad Bradley
March 31, 1999
Page 3

Soil Stabilization Stockpiles - As the paved area is currently not an impermeable barrier, a geomembrane should also be placed underneath the contaminated soil stockpiles.

Nuisance Control - NL still has not incorporated sufficient control measures to control the tracking of mud and debris offsite. Such measures should include an onsite tire washing program and a program to clean the adjacent streets with a street sweeper as necessary during daily site operations.

Removal of Sediments in the Former Mill Building - The Workplan does not address the removal of lead contaminated sediments located in the former mill building basement.

Please note that several of the City's comments are predicated upon ongoing negotiations between the City and NL. If this settlement does not come to fruition, DOE may have additional comments on the Workplan. Should you have any questions, please contact Renante Marante at (312) 742-0123. Thank you for your consideration.

Very truly yours,

A handwritten signature in black ink, appearing to read 'DJR', with a long horizontal flourish extending to the right.

David J. Reynolds, P.E.
Deputy Commissioner, Brownfield Division

cc: Jennifer Muss (Mayor's Office)
George Theophilos (DOL)
Brian Bossert (DOL)



217/785-6871

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

1021 NORTH GRAND AVENUE EAST, P.O. BOX 19276, SPRINGFIELD, ILLINOIS 62794-9276

THOMAS V. SKINNER, DIRECTOR

March 24, 1999

Mr. Brad Bradley
United States Environmental Protection Agency, Region 5
77 West Jackson Boulevard
Chicago, IL 60604-3590

Refer to: 0316005116/Cook
Dutch Boy Paint
S. F. Technical

Dear Mr. Bradley:

I have reviewed the Remedial Design/Remedial Action Work Plan, Technical Specifications and Health and Safety Plan submitted by Environmental Strategies Corporation for the Dutch Boy site and received on March 16, 1999. I have the following comments:

Section 1.1 The objective refers to a risk-based cleanup goal for lead of 1,400 mg/kg. The Illinois EPA finds this acceptable as a not-to exceed level, in an industrial/commercial setting with institutional controls and cautions for construction workers. Section 02222 of the Technical Specifications reflects this limit, however a separate document, such as a Deed Restriction will be necessary to perpetuate the industrial use and worker caution statements.

In addition, 1,400 mg/kg should only be used as an objective for off-site industrial/commercial properties that have the necessary restrictions such as institutional controls on future use of the property and worker caution statements. It is not acceptable for residential properties which have been affected by the site.

Sections 1.2 and 3.5 describe a 2-3 inch asphalt-pavement cap to be placed over areas of the existing concrete surface which are not intact and which provide a potential direct-contact exposure pathway to lead-containing soil. Sections 1.2 and 3.5 also state that provisions for the maintenance of the asphalt cap will be defined in the Risk Management plan. A detailed maintenance plan should be developed which specifies how inspections are to be conducted, how often and who will perform them. It should include the method by which problems will be

noted, how soon they will be addressed and by whom. Copies of the plan and inspection reports should be maintained in a public place so that interested members of the public can be assured that regular inspections and necessary repairs are performed. In addition, the Maintenance Plan should contain Worker Caution warnings for future workers who may need to remove portions of the protective cover, cracked concrete and contaminated sub-soil. Those cautions should address worker protection and how excavated materials should be handled.

Section 2.4 page 8 contains a statement that selected soil samples were analyzed for several other parameters to evaluate their impact on remedial technologies for the lead-containing soil. However, the work plan does not address remediation of these contaminants which include ethylbenzene and "diesel-range organics". These contaminants are a concern, in and of themselves, and the work plan should provide appropriate removal or remedial actions.

On pages 2 & 11 is a description of nine underground tanks, two of which contain regulated substances, but due to their age, may be grandfathered. Section 02071 in the Technical Specifications does not specify how many tanks are to be removed and does not address the issue of the tanks which may be grandfathered. It may still be necessary for remedial actions to be taken regarding these tanks, unless the State Fire Marshall is able to make a determination that no action is necessary.

The Health and Safety Plan addresses potential risks and necessary protection for workers on site, however, it does not address problems which may occur off-site as a direct result of the project. The main potential risk to off-site areas will be from contaminated dust. Dust control is addressed in section 7.6 of the Health and Safety Plan, and may be adequate to prevent off-site problems, however it does not include that protection as a goal of the project. Specific actions should be included in Section 02222 of the Technical Specifications with the stated goal to prevent dust from blowing off-site and include the monitoring that will assure the goal is met.

In closing, I want to point out that this document does not address remedial actions on the nearby affected residential and commercial properties. When will that work take place? And, if there is an interest in a No Further Remediation (NFR) letter at some time in the future, I recommend the site be enrolled in the Illinois EPA Site Remediation Program. Please feel free to call me at any time if you have any comments or questions.

Sincerely,



988 Frances Sue Doubet, Project Manager
State Sites Management Unit
Remedial Project Management Section
Bureau of Land

cc: David Reynolds City of Chicago
Division file

Brad,

I'm home today with my sick boys and just recalled that today was the deadline for getting comments back to you on the 100% workplan. This will probably be a bit rough as I'm doing it partly from memory. I'd like to get your feedback on these issues before I send them on to the community. You can reply here or I could arrange a call with the two of us, Dr. Masten and a grad student. Regards, Kirk

TOSC has questions regarding the workplan for the Dutch Boy Site in Chicago, IL.

</bold>

The items are in the comments on the Technical Review of the 60% Workplan:

- 1) Item 2: Will the air be monitored for contaminants during purging of the underground storage tanks?
- 2) Item 11: What steps will be taken if it is found out that there is a significant discrepancy in the lead levels of the 2 representative samples? Will more samples be taken?
- 3) Items 11-16: Why is the description of the field demonstration so sketchy?
- 4) Item 19: What is planned for the "mill building"? How will the sediments in that building be addressed?
- 5) Health and Safety Plan: TOSC would like to know whether the trucks will be covered before leaving the site and also about the washing down of trucks.
- 6) What is the TCLP lead standard? Was the level changed from 0.75mg/L to 5.0 mg/L to match that standard?